

# A brief review of some strange and unusual poisoning in children



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## Dear Editor

Acute pediatric poisoning is still considered as a universal health problem. This indicates a relatively common reason for children hospitalization in emergency units. Evidence shows an incidence rate of 0.33% to 7.6% for children poisoning (1).

Children aged 1–5 years are at the highest risk for poisoning and this age range includes 80% of all pediatric poisoning cases (1). While household products and cleansers are the most responsible agents for poisonings in children aged 2–3 years, the medications left open or kept in the cupboard are the most common causes of poisoning in children aged 3 to 5 years (2).

Noticeably, only small amounts of some medications may lead to severe toxicity in children (3). For example; although toxic dose is estimated to be about 10–20 mg/kg for TCA (three cyclic anti-depressants), only one pill may cause severe toxicity or only one pill of drugs in Calcium channel blockers class may cause severe toxicity in children under three years of age. This also can be related to the severe salicylate toxicity following the consumption of even as much as a phalange of methyl salicylate gel in a toddler.

The Clinical Toxicology Center in Imam Reza hospital in Mashhad is the referral center of poisonings in the East of Iran and many cases of poisoned children are referred to this center and some cases are admitted.

In this letter we report some specific, strange and unusual poisonings in children admitted in our center.

Table 1 shows unusual and strange poisonings in

children. It is important to mention that this table can be updated over time. Physicians should be aware of these unusual condition and management options that are recommended.

We should never use vacuum cleaners to clean mercury. The vacuuming will put mercury into the air and increase exposure. Never use a broom to clean up mercury. It will break the mercury into smaller droplets and spread them. Never pour mercury down a drain. After cleanup: Remember to keep the area well ventilated to the outside (i.e., open windows and turn on fans in the exterior windows) (4).

## Authors' contributions

All of the authors participated in data collection, analysis and writing this article

## Ethical Issues

This investigation was approved by the Ethics Committees of Mashhad University of Medical Sciences.

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**Table 1.** Characteristic of some unusual poisonings in children

Poisoning Group	Name of poisonous substance/drug	Drug/substance compound / Indication of use	Toxidrome (main clinical symptoms)	Management
Skin and hair care products	Shampoo	Sodium Lauryl Sulfate, sterol, starch sulfate	GI irritation	There is no need for action except carpet shampoo that is considered caustic and the person should be referred to a gastroenterologist. For moderate to severe Irritant effects of bathing shampoo medical supportive treatment is needed or refer the patient to a gastroenterologist.
	Hair conditioners	Bathing materials	GI irritation and nausea	Symptomatic treatment- if symptoms are severe (acid and alkali injury)
	Soap	Bathing materials	GI irritation and nausea	Symptomatic treatment
	Oxidizing liquid for hair dye	H2o2	GI irritation	Supportive measures
Solvents and House building materials	Absorbent materials silaca gel	Silicium oxide-cobalt chloride (blue)(rare)	GI stimulation	Preventing GI irritation and inducing vomiting
	Instant drop glue	Hydrocarbon		Cleansing from the tooth <sup>a</sup>
	Acetone	Nail polish cleaner	GI symptoms - hyperglycemia	H2blocker for 7 to 10 days
	Plastic based paint and oil based paint	Building painting. Hydrocarbon	GI stimulation –There are considerable amounts of lead in paints in Iran.	Supportive care- H2 Blocker/PPI
	Oil paint thinner	Hydrocarbon	Gastrointestinal stimulation	Supportive care- H2 Blocker/PPI
	Oil varnish	Hydrocarbon	Gastrointestinal stimulation	Supportive care- H2 Blocker/PPI
	Silver oil	Hydrocarbon	GI stimulation	Supportive care- H2 Blocker/ PPI
	Polyester	Xylene (dimethylbenzene)	Headache, fatigue, Nausea, burning eyes and nose	Supportive care- H2 Blocker/ PPI
	Acetylene	Hydrocarbon	Dizziness - headache - mild epigastric pain	Similar to hydrocarbon poisoning
	Fluorine (1000 to 5000 PPM) and hydrofluoric acid	Industrial use and health care material	Severe lung and burn injuries in the eye-ulcer in the respiratory tract Hypocalcemia and hypomagnesemia	Wash with plenty of water - rubbing magnesium oxide - calcium gluconate
	Formaldehyde	It is used in manufacture of resins and textiles, as a disinfectant, and as a laboratory fixative or preservative. Formaldehyde solution may contain methanol in some degree	Corneal burn- and mouth burn nausea and vomiting	Rinse eyes and skin with plenty of water-measures to deal with methanol poisoning
	Potassium polyacrylate	Water absorbing materials in agriculture	Nausea and vomiting	Supportive treatment
	Building Gypsum	Chalk mixed with water	GI symptoms and obstruction	Surgical consultation and supportive measures
Dead building plaster	Plaster wall	GI stimulatory symptoms	Supportive measures	
Dishwasher tablets	Detergent ingredients. Alkaline builders. Surfactants. Chlorine compounds and bleaching agents. Perfumes. Alkaline salts and oxidizing agents	Caustic injury	Supportive care- High dose H2 Blocker/PPI. Refer to a gastroenterologist	

**Table 1.** Continued

Poisoning Group	Name of poisonous substance/drug	Drug/substance compound / Indication of use	Toxidrome (main clinical symptoms)	Management
	Oven cleansers	Water, sodium hydroxide/potassium hydroxide/lithium hydroxide, surfactant, a humectant	Caustic injury (high potent alkaline)	Supportive care- High dose H2 Blocker/PPI. Refer to a gastroenterologist
	Glassware cleansers	Different composition but mostly: Isopropyl alcohol, Monoethanolamine, Butyl glycol	Irritation, ketosis may occur	Supportive care for GI irritation
	Hand sanitizer	There are two main classes of hand rubs: Alcohol based and non-alcohol based. alcohol based hand rubs are recommended by WHO. Ethanol, isopropanol, normal propylene, benzalkonium chloride, skin softener and other additives are ingredients of Dermosept (a common hand rub)	Low blood sugar, coma and seizure	Alcohol poisoning management (Airway protection, control of hypoglycemia, control of seizure and other supportive care (4)
Plants	Anemone		Delusions	Cancerous measures
Cosmetic products	Perfume	Fragrant essential oils or aroma compounds, fixatives and solvents	Signs of toxicity of ethanol and methanol	Surface measurements and appropriate therapeutic measures
	Cosmetics	Often lead free or contains small amount	Stimulatory symptoms	Supportive measures
Miscellaneous	Mercury thermometer	Elemental Mercury	GI stimulatory symptoms	If it is consumed orally no further attempt is needed but it recommended to Clean up mercury spills
	Watch battery	Manganese dioxide - citric acid-mercuric acid and zinc	Gastrointestinal irritation	Chest and abdomen and internal consultation for endoscopy
	SIM card	Metal content- bond wire	Brief digestive symptoms	Supportive measures
	Lady- bug		Stimulatory symptoms	Supportive measures
	Lizard	Some kinds may include cyanide contents in their body structure	GI irritation	Supportive measures
	Sulfur match, Wooden match or match stick	Sulfur and phosphorus	Gastrointestinal irritation	Supportive measures
	Firecracker	Gunpowder	Mouth and stomach ulcers	Supportive measures: Treatment similar to caustic injury management if symptoms are severe

<sup>a</sup> If drop glue causes the teeth to be stuck together, it should be cleansed with vinegar, and if it stuck to the fingers, it should be removed with acetone. If the lips are stuck or the mouth mucous membrane adheres, the patient should be NPO and TPN be initiated until the glue is gradually dissolved by saliva and the adhesion bands released.